WHAT IS CLAIMED IS:

1. A method for forming a temperature controlled railway car comprising:

forming a railway car underframe having a generally rectangular perimeter defined in part by a first end, a second end and a pair of opposite sides spaced from each other and extending from the first end to the second end;

forming a pair of side wall assemblies and a pair of end wall assemblies with each side wall assembly and each end wall assembly having an exterior metal surface and an interior surface of fiber reinforced material with foam insulation bonded therebetween;

attaching a first side wall assembly with one side of the railway car underframe;

attaching a second side wall assembly with the other side of the railway car underframe;

attaching a primary floor to the railway car underframe;

attaching a first end wall assembly with the first end of the railway car underframe;

attaching a second end wall assembly with the second end of the railway car underframe;

attaching a roof assembly to the side wall assemblies and the end wall assemblies opposite from the primary floor;

applying insulating foam to respective joints formed between the end wall assemblies and the side wall assemblies, the primary floor and the side wall assemblies and the end wall assemblies, and the roof

assembly and the end wall assemblies and the side assemblies;

attaching a respective door assembly with an opening formed in each of the side wall assemblies to control access to the railway car; and

installing a secondary floor on the primary floor opposite from the railway car underframe.

2. The method of Claim 1 further comprising:

forming a respective top chord for each side wall assembly;

forming a respective side sill assembly for each side wall assembly; and

attaching a plurality of metal sheets with the respective top chord and the respective side sill assembly to form a generally smooth, exterior metal surface for each side wall assembly.

3. The method of Claim 1 further comprising:

forming a respective top plate for each end wall assembly;

forming at least a portion of a respective end sill assembly for each end wall assembly; and

attaching a plurality of metal sheets with the respective top plate and respective portion of the end sill assembly to form a generally smooth, exterior metal surface for each end wall assembly.

4. The method of Claim 1 further comprising:

forming a top chord for each side wall assembly;

forming a side sill assembly for each side wall assembly;

attaching a plurality of support posts with the respective side sill assembly and top chord;

attaching a plurality of metal sheets with the top chord, support posts and side sill assembly to form an exterior metal surface for the respective side wall assembly;

attaching a layer of fiber reinforced material with the support posts opposite from the metal sheets to form an interior surface for the respective side wall assembly;

injecting liquid insulating foam into void spaces formed between the metal sheets, the support posts and the layer of fiber reinforced material;

applying heat to the liquid insulating foam to form solid foam insulation with bonds between adjacent portions of the metal sheets, support posts and fiber reinforced material; and

pressing the layer of fiber reinforced material and liquid insulating foam to maintain desired dimensions of the side wall assembly during formation of the solid foam insulation.

5. The method of Claim 1 further comprising:

forming a top plate for each end wall assembly;

forming at least a portion of an end sill assembly for each end wall assembly;

attaching a first edge plate and a second edge plate with respective ends of the top plate and the portion of the end sill assembly;

attaching a plurality of end beams spaced from each other with a first end of each end beam attached to a respective portion of the first edge plate and a second end of each end beam attached to a respective portion of the second edge plate;

attaching a plurality of metal sheets with the top plate, end beams and the portion of the end sill assembly to form an exterior metal surface for the respective end wall assembly;

attaching a layer of fiber reinforced material with the end beams opposite from the metal sheets to form an interior surface for the respective end wall assembly;

injecting liquid insulating foam into void spaces between the metal sheets, the end beams and the layer of fiber reinforced material;

applying heat to the liquid insulating foam to form solid foam insulation with bonds between adjacent portions of the metal sheets, end beams and fiber reinforced material; and

pressing the layer of fiber reinforced material and the liquid insulating foam to maintain desired dimensions of the end wall assembly during formation of the solid foam insulation.

6. The method of Claim 1 further comprising:

forming each side wall assembly with a plurality of metal sheets having an interior surface and an exterior surface;

attaching support posts with the interior surface of the metal sheets and the respective side sill assembly;

attaching a layer of ballistic resistant fabric with the support posts opposite from the metal sheets to define in part void spaces between the interior surface of the metal sheets, the associated support posts and adjacent portions of the layer of fiber reinforced material;

placing the side wall assembly in a press;

injecting liquid insulating foam into the void spaces associated with each side wall assembly; and

applying heat and pressure to the insulating foam to form solid foam insulation with bonds between the interior surfaces of the metal sheets, adjacent portions of the support posts and the layer of ballistic resistant fabric.

7. The method of Claim 6 further comprising placing an injection block with openings extending therethrough adjacent to the void spaces for use in injecting the liquid insulating foam into the respective void spaces.

8. The method of Claim 6 further comprising preheating each side wall assembly prior to placing the side wall assembly in the press.

9. The method of Claim 1 further comprising:

forming each end wall assembly with a plurality of metal sheets having an interior surface and an exterior surface;

attaching end beams with the interior surfaces of the metal sheets;

attaching a layer of ballistic resistant material with the support posts opposite from the metal sheets to define in part void spaces between the interior surfaces of the metal sheets, the associated end beams and adjacent portions of the layer of ballistic resistant fabric;

placing the end wall assembly in a press;

injecting liquid insulating foam into the void spaces associated with each end wall assembly; and

applying heat and pressure to the insulating foam to form solid foam insulation with bonds between the interior surface of the metal sheets, adjacent portions of the support posts and the layer of ballistic resistant fabric.

10. The method of Claim 9 further comprising preheating each end wall assembly prior to placing the end wall assembly in the press.

11. A method for forming an insulated railway car comprising:

forming a railway car underframe having a generally elongated, rectangular perimeter defined in part by a first end and a second end and a first side and a second side spaced from each other and extending longitudinally from the first end to the second end;

forming a pair of side wall assemblies and a pair of end wall assemblies with each end wall assembly and each side wall assembly respectively formed from a plurality of metal sheets having respective exterior surfaces and interior surfaces;

attaching a plurality of support posts spaced from each other with the interior surfaces of the metal sheets associated with each side wall assembly extending between a respective side sill assembly and a respective top chord;

attaching a plurality of end beams spaced from each other with the interior surfaces of the metal sheets associated with each end wall assembly;

attaching respective isolators to each support post and each end beam opposite from the attached metal sheets;

placing layers of fiber reinforced plastic on the isolators to form respective interior surfaces for the side wall assemblies and the end wall assemblies;

placing liquid insulating foam within void spaces formed between the metal sheets, support posts, end beams and layers of fiber reinforced plastic;

bonding resulting foam insulation with the interior surfaces of the metal sheets, adjacent support posts, adjacent end beams and adjacent portions of the fiber reinforced plastic;

coupling the side sill assembly of each side wall assembly with the railway car underframe; and

coupling the portion of the end sill assembly of each end wall assembly with the railway car underframe.

12. The method of Claim 11 further comprising attaching respective pieces of trim molding with flexible joints formed between the side wall assemblies and the end wall assemblies.

13. A method of forming a side wall assembly for a composite box structure comprising:

attaching a plurality of support posts with one side of a plurality of metal sheets;

attaching at least one layer of fiber reinforced material with the support posts opposite from the metal sheets to form a plurality of void spaces between the metal sheets, the support posts and the layer of fiber reinforced material;

placing the side wall assembly in a foam press with the side wall assembly tilted at an angle;

injecting liquid insulating foam into the respective void spaces; and

applying pressure and heat to the liquid insulating foam to form solid foam insulation having bonds with the metal sheets, adjacent support posts and adjacent portions of the fiber reinforced material.

14. The method of Claim 13 further comprising:

attaching a side sill assembly with one end of each support post and one edge of the metal sheets;

attaching a top chord with an opposite edge of the metal sheets and an opposite end of each support post;

inserting an injection block having a plurality of holes extending therethrough into respective void spaces adjacent to the top chord; and

injecting the liquid insulating foam into the associated void spaces through the holes in the injection block.

15. The method of Claim 13 further comprising placing the side wall assembly in the foam press with the side wall assembly tilted at an angle between approximately eight degrees and twelve degrees.

16. A method of forming an end wall assembly for a composite box structure comprising:

attaching a plurality of end beams with one side of a plurality of metal sheets;

attaching at least one layer of fiber reinforced material with the end beams opposite from the metal sheets to form a plurality of void spaces between the metal sheets, the support posts and the layer of fiber reinforced material;

placing the end wall assembly in a foam press with the end wall assembly tilted at an angle;

injecting liquid insulating foam into the respective void spaces; and

applying pressure and heat to the liquid insulating foam to form solid foam insulation having bonds with the metal sheets, adjacent end beams and adjacent portions of the fiber reinforced material.

17. The method of Claim 16 further comprising:

attaching at least a portion of an end sill assembly with one edge of the metal sheets; and

attaching a top plate with an opposite edge of the metal sheets.

18. The method of Claim 16 further comprising placing the end wall assembly in the foam press with the end wall assembly tilted at an angle between approximately eight degrees and twelve degrees.

19. A method of forming an insulated railway car comprising:

forming a railway car underframe with a center sill and a pair of body bolsters extending laterally therefrom and spaced respectively from a first end and a second end of the center sill, a first railway truck proximate one of the body bolsters, a second railway truck proximate the other body bolster, and a plurality of cross bearers and cross ties spaced from each other and extending generally parallel with the center sill;

placing a plurality of longitudinal stringers on the cross bearers and cross ties with the longitudinal stringers spaced from each other and extending generally parallel with the center sill whereby the longitudinal stringers, the cross bearers and the cross ties cooperate with each other to form a generally elongated, rectangular configuration;

forming a pair of side wall assemblies with each side wall assembly having a respective side sill assembly formed an integral component thereof;

forming a pair of end wall assemblies with each end wall assembly having a respective end sill assembly formed as an integral component thereof;

attaching one of the side wall assemblies with the railway car underframe by forming a plurality of mechanical couplings between the associated side sill assembly and respective ends of the cross bearers and cross ties;

attaching the other side wall assembly with the railway car underframe by forming a plurality of

mechanical couplings between the associated side sill assembly and respective ends of the cross bearers and cross ties;

attaching one of the end wall assemblies with one end of the railway car underframe by forming a plurality of mechanical couplings between the railway car underframe and the respective end sill assembly; and

attaching the other end wall assembly with the other end of the railway car underframe by forming a plurality of mechanical coupling between the railway car underframe and the respective end sill assembly.

20. The method of Claim 19 comprising:

forming each side sill assembly with a generally J shaped cross section; and

forming a respective support member on an interior surface of each side sill assembly with the support member extending longitudinally from proximate one end of the side sill assembly to proximate an opposite end of the side sill assembly.

21. A manufacturing facility for use in assembling a railway car having a composite box structure mounted on and attached to a railway car underframe, the manufacturing assembly having at least a first assembly line comprising:

a first station for attaching a pair of side wall assemblies with the railway car underframe;

a second station for applying a primary floor with the railway car underframe;

a third station for attaching a pair of end wall assemblies with the railway car underframe;

a fourth station for completing attachment of the side wall assemblies and the end wall assemblies with the primary floor and the railway car underframe;

a fifth station for applying a roof assembly to the side wall assemblies and the end wall assemblies opposite from the primary floor; and

a sixth station for hanging doors on respective openings formed in each side wall assembly.

22. The manufacturing facility of Claim 21 including a second assembly line comprising:

a first station for respectively attaching body bolsters adjacent to opposite ends of a center sill;

a second station for attaching cross bearers and longitudinal stringers with the center sill; and

a third station for attaching railway car trucks with the center sill adjacent to the body bolsters.

23. The manufacturing facility of Claim 21 including a second assembly line comprising:

a first station to form a side sill assembly;

a second station to form a top chord;

a third station to attach support posts spaced from each other and coupled with the top chord and the side sill assembly;

a fourth station to attach metal sheets with an exterior of the top chord, side sill assembly and support posts; and

a fifth station for applying a layer of fiber reinforced material with the support posts opposite from the metal sheets.

24. The manufacturing facility of Claim 21 including a second assembly line comprising:

a first station to form a top plate;

a second station to form an end sill assembly;

a third station to attach end beams spaced from each other and coupled with a first edge plate and a second edge plate;

a fourth station to attach a plurality of metal sheets with an exterior of the end frame assembly; and

a fifth station to attach a layer of fiber reinforced material with the end beams opposite from the metal sheets.

25. The manufacturing facility of Claim 21 having a second assembly line comprising:

a first station for washing interior surfaces of the side wall assembly or the end wall assembly;

a second station for drying the end wall assembly or the side wall assembly;

a third station for preheating the end wall assembly or the side wall assembly;

a fourth station for injecting liquid insulating foam and applying heat and pressure to form solid foam insulation in the respective side wall assembly or the end wall assembly; and

a fifth station to complete the end wall assembly or side wall assembly.

26. A method for forming a side wall assembly comprising:

forming a side sill assembly and a top chord;

installing support posts and door posts between the top chord and the side sill assembly;

welding the support posts and door posts with the top chord and the side sill assembly to form a side wall frame having an opening for a door;

attaching metal sheets to an exterior of the side wall frame;

welding portions of the metal sheets with adjacent portions of the side wall frame;

cleaning interior surfaces of the metal sheets and the side wall frame;

attaching a strip of insulating material with the support posts opposite from the metal sheets;

attaching at least one layer of fiber reinforced material with the strips of insulating material to form an interior surface of the side wall assembly;

preheating the side wall assembly;

injecting liquid insulating foam into the side wall assembly between the metal sheets and the layer of fiber reinforced material; and

heating and pressing the liquid insulating foam to form solid foam insulation bonded with interior surfaces of the metal sheets, adjacent portions of the support posts and adjacent portions of the layer of fiber reinforced material.

27. A method for forming an end wall assembly comprising:

forming at least a portion of an end sill assembly and a top plate;

welding a first edge plate and a second edge plate with the top plate and the portion of end sill assembly to form an end wall frame assembly;

attaching a plurality of end beams with the first plate and the second edge plate by securing a first end of each end beam with a respective portion of the first edge plate and attaching a second end of each end beam with a respective portion of the second edge plate;

attaching metal sheets to an exterior of the end wall frame assembly;

cleaning interior surfaces of the metal sheets and the end wall frame assembly;

attaching isolators with the end beams opposite from the metal sheets;

attaching at least one layer of fiber reinforced material with the isolators to form an interior surface of the end wall assembly;

preheating the end wall assembly;

injecting liquid insulating foam into the end wall assembly between the metal sheets and the layer of fiber reinforced material; and

heating and pressing the liquid insulating foam to form solid foam insulation bonded with interior surfaces of the metal sheets, adjacent portions of the end beams and adjacent portions of the layer of fiber reinforced material.